

1 A METHOD AND APPARATUS OF REMOVING DEAD POULTRY FROM  
2 A POULTRY HOUSE

3 BACKGROUND OF THE INVENTION

4 1. Field of the Invention:

5 The present invention generally relates to a method  
6 and apparatus for removing dead poultry from a poultry  
7 house, and more particularly, to such a method and  
8 apparatus that reduces the amount of time and effort  
9 required to remove dead poultry from the poultry house.

10 2. Background of the Invention:

11 The commercial poultry industry typically raises a  
12 large number of birds, for example, chickens, turkeys or  
13 the like, in huge building or poultry houses which are  
14 often times 400 in length, each house being capable of  
15 containing up to 30,000 birds. The birds are raised in  
16 the poultry house from the time they are hatchlings and  
17 spend their entire growing period within the enclosure of  
18 the building before being collected, crated and sold to  
19 market once they reach the desired size and age.

20 Raising poultry such as chickens or turkeys is a  
21 labor intensive operation requiring constant care of the  
22 birds and their needs. Traditionally, chickens or other  
23 poultry have been fed by the farmer using a feed cart  
24 supported on an overhead rail to transport feed through  
25 the poultry house. The cart is manually rolled along the  
26 rail by the farmer to the various feed stations situated

1 throughout the house while feed is shoveled from the cart  
2 into floor level, flat feed trays for young birds and  
3 into bowls for older poultry. The young chicks require  
4 flat feed trays because they are not tall enough to reach  
5 into the feed bowls. Automated feeding arrangements are  
6 also known wherein feed is conveyed via feed lines that  
7 extend from a central hopper outside the house to feed  
8 receptacles distributed throughout the poultry house.

9       In order to assure the mobility of the diminutive  
10 sized hatchlings and young chicks within the poultry  
11 house so that they can get adequate access to food and  
12 water, nothing is situated on the poultry house floor of  
13 the poultry house other than the feed bowls for the older  
14 birds. As a result, everything in the poultry house,  
15 such as the water lines, feed lines and the like, are  
16 suspended by wires from hangers which makes it difficult  
17 for the farmer to move freely throughout the poultry  
18 house or traverse the width of the poultry house. To  
19 minimize the obstructions caused by this situation, the  
20 suspend items are typically arranged parallel to the  
21 longitudinal axis of the poultry house to form  
22 unobstructed lanes so that the farmer must walk  
23 lengthwise through the house to get around.

24       Bird mortality is generally low during the early  
25 part of their life when they are relatively small, but  
26 increases as the birds get older and bigger. In order to

1 maintain the general good health of the birds, the  
2 carcasses of the dead birds must be regularly and  
3 periodically removed from the poultry house. When the  
4 birds are young and small, the task of removing the dead  
5 birds is relatively easy because the mortality rate is  
6 fairly low and the size and weight of the birds is small.

7       During this period of the birds' growth cycle, a  
8 single bucket is sufficient to contain all the dead birds  
9 that are collected from the poultry house by the farmer  
10 during the periodic removal operations. The bird  
11 carcasses are then manually carried out of the poultry  
12 house in the single bucket and disposed of. This process  
13 typically requires the farmer to handle each bird carcass  
14 only once, i.e., when they are placed in the bucket.

15       However, as the birds get older, the mortality rate  
16 increases and as a result, there are more carcasses to be  
17 removed. In addition, the birds are bigger in size and  
18 weight. A single bucket is no longer sufficient to  
19 contain all the dead birds collected during a single,  
20 periodic removal session. As a result, the operation of  
21 removing the older birds is exceedingly difficult  
22 becoming one of the most labor intensive operations of  
23 poultry farming. Due to the increased size of the dead  
24 bird carcasses, the farmer collects the carcasses until  
25 the bucket is full and then piles the bucket of collected  
26 carcasses at strategic locations throughout the poultry

1 house. Then each pile of dead birds is picked up and  
2 hand carried from the poultry house.

3 It is not uncommon for each pile of bird carcasses  
4 to comprise several full buckets of dead birds and to  
5 have numerous piles of carcasses scattered throughout the  
6 poultry house. As a result, the farmer is handling each  
7 of the bird carcasses at least three times; once upon  
8 placement into the bucket, then again when they are  
9 placed in the pile and a further time when they are  
10 picked up from the pile and removed from the poultry  
11 house.

12 In US Patent 4,223,638 to Sappington et al., which  
13 relates to a poultry feeder apparatus comprising a feed  
14 hopper suspended on an overhead rail by motor driven  
15 trolley wheels, Sappington et al. disclose the provision  
16 of a convenience receptacle mounted on the feed hopper  
17 for storing dead chicken or debris located by the farmer  
18 during feeding. As best seen in Figure 1 of the '638  
19 patent, the convenience receptacle comprises a bucket of  
20 a relatively small size inconveniently located on one  
21 side of the feed hopper. As a result, the bucket can be  
22 loaded from only one side of the hopper and due to it's  
23 diminutive size is not capable of containing all the dead  
24 poultry found during a single removal operation once the  
25 poultry grows older and bigger. This arrangement of  
26 conveying poultry carcasses therefore fails to solve the

1 problem of reducing the number of times the farmer has to  
2 handle the poultry during a removal session and suffers  
3 from the same drawbacks of the manual method of removal.

4 It is also known to convey live poultry from fenced  
5 in collection areas within the poultry house to a truck  
6 using a motorized conveyor belt such as disclosed by US  
7 patent 4,201,156 to Kahler. However, the Kahler  
8 invention is not adapted for nor does the patent disclose  
9 or suggest using this arrangement for removing dead  
10 poultry which are scattered randomly throughout the  
11 poultry house. Moreover, Kahler's device requires  
12 extensive and therefore labor intensive set-up within the  
13 poultry house before it can be used. In addition, the  
14 device must then be removed once the operation of  
15 transporting the live poultry out of the poultry house is  
16 complete in order to allow the farmer and/or poultry to  
17 move freely throughout the poultry house. As a result,  
18 Kahler's device's set-up and removal requirements are to  
19 labor intensive for practical use during the numerous  
20 poultry carcass removal operations that must be performed  
21 by the poultry farmer as the poultry grow to their  
22 harvest size.

#### 23 SUMMARY OF THE INVENTION

24 Accordingly, it is an object of the present  
25 invention to provide a method of and apparatus for  
26 removing dead poultry from a poultry house that overcomes

1 the deficiencies of the prior art.

2 Therefore, one object of the present invention is to  
3 provide a method and apparatus for removing dead poultry  
4 from a poultry house that reduces the amount of labor  
5 required for removing dead poultry carcasses.

6 Another object of the present invention is to  
7 provide a method and apparatus for removing dead poultry  
8 from a poultry house that permits removal of all dead  
9 poultry, regardless of size, during a single removal  
10 operation.

11 Yet another object of the present invention is to  
12 provide a method and apparatus for removing dead poultry  
13 from a poultry house that permits loading of the poultry  
14 carcasses for removal from any location within the  
15 poultry house.

16 Still another object of the present invention is to  
17 provide a method and apparatus for removing dead poultry  
18 from a poultry house that reduces the number of times  
19 that the farmer has to handle the poultry carcasses  
20 during each removal operation.

21 One advantageous feature of the present invention is  
22 that there is no need to remove the equipment, used in  
23 accordance with method to transport the poultry carcasses  
24 for removal out of the poultry house, into and/or out of  
25 the poultry house each time a poultry carcass removal  
26 operation is required.

1        Another advantageous feature of the present  
2 invention is that the equipment used to transport the  
3 poultry carcasses for removal out of the poultry house  
4 does not obstruct the floor area of the poultry house.

5        An advantageous feature of one embodiment of the  
6 method and apparatus of the present invention is that  
7 there are no special set-up, removal or storage  
8 requirements for the equipment used to remove the dead  
9 poultry and in some cases the invention can employ  
10 equipment already existing in the poultry house.

11       These and other objects, advantages and features of  
12 the present invention are achieved by a method of  
13 removing carcasses of dead poultry randomly scattered  
14 throughout a poultry house having a floor, a width and a  
15 longitudinal centerline axis, the method comprising,  
16 according to one embodiment thereof, the steps of:  
17 arranging items in the poultry house to form unobstructed  
18 lanes that extend substantially lengthwise through the  
19 poultry house; positioning at least a portion of the  
20 conveyor substantially parallel to the longitudinal  
21 centerline axis of the poultry house, the conveyor having  
22 a moveable surface on which the carcasses are placed;  
23 while traversing the width of the poultry house by  
24 walking along each unobstructed lane of the poultry  
25 house, throwing the carcasses of dead poultry found in  
26 each unobstructed lane to the floor of the poultry house

1 at the conveyor; placing all the carcasses thrown to the  
2 floor of the poultry house onto the surface of the  
3 conveyor; and conveying the carcasses for removal out of  
4 the poultry house using the conveyor.

5 Further in accordance with the teachings of the  
6 present invention there is provided an apparatus for  
7 removing carcasses of dead poultry randomly scattered  
8 throughout a poultry house having a floor, a width, and a  
9 longitudinal centerline axis wherein items in the poultry  
10 house are arranged substantially parallel to the  
11 longitudinal centerline axis of the poultry house to form  
12 unobstructed lanes that extend lengthwise through the  
13 poultry house. The apparatus comprises, according the  
14 one embodiment thereof, a conveyor for conveying the  
15 carcasses of dead poultry for removal out of the house,  
16 the conveyor having a surface on which the carcasses are  
17 place; means for positioning at least a portion of the  
18 surface of the conveyor substantially parallel to the  
19 longitudinal centerline axis of the poultry house so that  
20 the entire conveyor is suspended off of the floor of the  
21 poultry house; and means for driving surface of the  
22 conveyor; wherein, while traversing the width of the  
23 poultry house by walking along each unobstructed lane of  
24 the poultry house, the carcasses of all the dead poultry  
25 found in each unobstructed lane are thrown to the floor  
26 of the poultry house at the conveyor. Once all the



1 carcasses have been so collected, they are then placed on  
2 the surface of the conveyor and conveyed for removal out  
3 of the poultry house by driving the surface of the  
4 conveyor.

5 Still other objects and advantages of the present  
6 invention will become readily apparent to those skilled  
7 in the art from the following detailed description,  
8 wherein there are shown and described preferred  
9 embodiments of the invention simply by way of  
10 illustration of the best mode contemplated by the  
11 inventor for carrying out the invention. As will be  
12 realized, the invention is capable of other and different  
13 embodiments without departing from the invention.  
14 Accordingly, the drawings and descriptions are regarded  
15 as illustrative in nature and not as restrictive.

16 BRIEF DESCRIPTION OF THE DRAWINGS

17 Figure 1 illustrates the arrangement of a poultry  
18 house for performing the method of the present invention;

19 Figure 2 illustrates one embodiment of the apparatus  
20 in accordance with the teachings of the present  
21 invention;

22 Figure 3 illustrates another embodiment of the  
23 apparatus of the present invention;

24 Figure 4 illustrates a further arrangement of the  
25 apparatus shown in Figure 3; and

26 Figure 5 is a block diagram illustrating the steps

1 of the method of the present invention.

2 DETAILED DESCRIPTION OF THE EMBODIMENTS OF THE  
3 INVENTION

4 The present invention generally relates to a method  
5 of and apparatus for removing the carcasses of dead  
6 poultry from a poultry house. As best seen in Figure 1,  
7 the carcasses 11 of dead poultry are randomly scattered  
8 throughout a poultry house 13 having a floor 15, a width  
9 17, a length 19 and a longitudinal centerline axis 21.  
10 Items 23 items in the poultry house 13, such as feed  
11 trays, water lines and feed lines, are arranged to form  
12 unobstructed lanes 25 that extend lengthwise through the  
13 poultry house 13. Positioned substantially parallel to  
14 the longitudinal centerline axis 21 of the poultry house  
15 13 is a conveyor 27 which is employed to convey the  
16 carcasses 11 for removal out of the poultry house 13.

17 In accordance with one embodiment of the present  
18 invention, the conveyor is position substantially along  
19 the longitudinal centerline axis 21 of the poultry house  
20 13 as shown in Figure 1. According to a further  
21 embodiment of the present invention, the conveyor is  
22 positioned along, for example, a closed loop that extends  
23 adjacent to interior perimeter of the house 13. This  
24 latter arrangement, as seen in Figure 4, is particularly  
25 useful in wider than normal poultry houses 13, for  
26 example, houses having a width of 60 feet or more.

1        In addition, as will be more fully discussed  
2 hereinafter, the conveyor 27 is not intended to be moved  
3 into or out of the poultry house 13 during each carcasses  
4 removal operation, but rather is installed only once  
5 within the poultry house 13 thereby reducing the amount  
6 of labor needed to remove dead poultry carcasses during a  
7 growing season using the method of the present invention.  
8 In addition, with particular reference to Figures 3 and  
9 4, existing feed delivery arrangements can be adapted for  
10 use in accordance with present invention.

11        In accordance with the teachings of the present  
12 invention, during a traverse of the width 17 of the  
13 poultry house 13, along a circuitous path P along each  
14 unobstructed lane 25 of the poultry house 13, the  
15 carcasses 11 of dead poultry found in each unobstructed  
16 lane 25 of the poultry house 13 are collected by the  
17 farmer onto the floor 15 of the poultry house 13 at the  
18 conveyor 27. The farmer need only reach down and pick up  
19 each carcass 11 encountered while walking down an  
20 unobstructed lane 25 and throw or pitch the carcass 11 to  
21 the floor 15 at the conveyor 27. Once all the carcasses  
22 11 have been collected on the floor 15 at the conveyor  
23 27, the farmer walks down along the side of conveyor 27  
24 and picks up the carcasses on the floor and places all  
25 the carcasses 11 collected on the floor 17 onto the  
26 conveyor. The collected carcasses 11 are then conveyed

1 for removal out of the poultry house 13 using the  
2 conveyor 27. A container 21 can be provided for  
3 collecting for disposal all the carcasses 11 conveyed for  
4 removal out of the poultry house 13 by the conveyor 27.

5 The conveyor 27 is preferable suspended off of the  
6 floor 15 of the poultry house 13. As a result, the area  
7 under the conveyor 27 is unobstructed and during the  
8 collection process, it is possible for the farmer to  
9 collect the carcasses 11 on the floor at the conveyor 27  
10 so that all the carcasses can be reached while walking  
11 the length 19 of the poultry house 13 beside the conveyor  
12 27. Thus, according to the embodiment illustrated by  
13 Figure 1, all the carcasses 11 collected on the floor 15  
14 can be placed on the conveyor 27 during a single traverse  
15 of the length of the poultry along the longitudinal  
16 centerline of the poultry house.

17 Referring to Figure 2, the conveyor 27, according to  
18 one embodiment thereof, has a surface, for example, a  
19 motor driven endless belt 33 looped on and supported by a  
20 tray 35. The carcasses 11 are placed on the endless belt  
21 33 and conveyed for removal out of the poultry house 13  
22 by turning on the motor 37, for example, using on/off  
23 switch 39. In this embodiment, the tray 35 of the  
24 conveyor 27 is suspended by wires 41 that extend and  
25 retract to move the conveyor 27 between a stored position  
26 A adjacent a ceiling of the poultry house 13 and an

1 operational position B adjacent to the floor 15 of the  
2 poultry house 13. Therefore, the conveyor 27 need only  
3 be install once and is stored out of the way when not in  
4 use by moving the conveyor 27 from the operational  
5 position B to the stored position A adjacent the ceiling  
6 after all the carcasses 11 are conveyed out of the  
7 poultry house 13.

8       This arrangement also permits easy loading of  
9 poultry carcasses 11 from the poultry house floor 15 onto  
10 the conveyor 27 since the height H of the conveyor 27  
11 above the floor 15 of the poultry house 13 can be  
12 variably adjusted to a height H for easy loading of  
13 carcasses onto the conveyor 27. As a result, the amount  
14 of labor needed to use the method of the present  
15 invention as compared to prior methods is greatly reduced  
16 because labor intensive set-up and tear down of the  
17 conveyor 27 for each of the numerous poultry carcass  
18 collection sessions are eliminated.

19       Referring to Figure 3, according to a further  
20 embodiment of the apparatus of the present invention, the  
21 conveyor 27 has a surface comprising a basket 43  
22 suspended from an overhead rail 45 by wheels 47, the  
23 overhead rail 45 being position adjacent the ceiling of  
24 the poultry house 13 so as to extend parallel to the  
25 longitudinal axis 21 of the poultry house 13. In this  
26 arrangement, the overhead rail 45 is positioned

1 substantially parallel to the longitudinal centerline 21  
2 of the poultry house, for example, as shown in Figure 1.  
3 As previously discussed, the carcasses 11 found in each  
4 unobstructed lane 25 of the poultry house 13 are thrown  
5 by the farmer onto the floor 15 of the poultry house 13  
6 beneath or at the overhead rail 45 during a single  
7 traverse of the width 17 of the poultry house. The  
8 poultry carcasses 11 are then placed in the basket 43  
9 suspended from the overhead rail 45 during a single  
10 traverse along the length 19 of the poultry house 13  
11 while manually rolling the basket 43 along the rail 45  
12 substantially from one end of the poultry house 13 to the  
13 other. The basket 43 is substantially open on all sides  
14 so that the carcasses 11 of dead poultry are placed into  
15 the basket 43 from any side of the basket 43 without  
16 restriction. In addition, the basket 43 is large enough  
17 to hold all the carcasses 11 of dead poultry collected  
18 during a single traverse of the width of the poultry  
19 house regardless of the size and age of the poultry.

20 According to yet another embodiment of the apparatus  
21 of the present invention, the surface, i.e., the basket  
22 43 is suspended from the rail 45 by wheels 47 that are  
23 driven by a motor 49. As previously described above in  
24 regard to the method, carcasses 11 are placed in the  
25 basket 43 during a single traverse of the length 19 of  
26 the poultry house 13, however, with this arrangement the

1 basket 43 is moved along the rail 45 substantially from  
2 one end of the poultry house 13 to the other under the  
3 control of the motor 49. The operation of the motor 49  
4 is preferably controlled by a remote control, hand-held  
5 device 51 so that the position of the basket 43 along the  
6 longitudinal axis 21 of the poultry house 13 is  
7 controlled by the farmer using the remote control device  
8 51.

9 Referring to Figure 4, according to a further  
10 embodiment of the apparatus shown in Figure 3, the  
11 overhead rail 45 of the conveyor is positioned along a  
12 closed loop that extends adjacent to the interior  
13 perimeter 55 of the house 13. This is particularly  
14 useful in wider than normal poultry houses 13, for  
15 example, houses having a width of 60 feet or more.  
16 Applicant notes that a normal poultry house width is  
17 about 40 feet.

18 Referring to Figure 5, a block diagram illustrates  
19 one embodiment of the method for removing carcass of dead  
20 poultry randomly scattered throughout a poultry house  
21 having a floor, a width, a length and a longitudinal  
22 centerline axis. In step one, items in the poultry house  
23 are arranged to form unobstructed lanes that extend  
24 substantially lengthwise through the poultry house. In  
25 step two, at least a portion of the conveyor is  
26 positioned substantially parallel to the longitudinal

1 centerline axis of the poultry house.

2 In step 3, while traversing the width of the poultry  
3 house along a circuitous path along each unobstructed  
4 lane of the poultry house, the farmer collects, by  
5 throwing, for example, the carcasses of dead poultry  
6 found in each unobstructed lane of the poultry house onto  
7 the floor of the poultry house at the conveyor. In step  
8 4, the carcasses on the floor of the poultry house are  
9 placed onto the conveyor. In step 5, the carcasses are  
10 conveyed for removal out of the poultry house using the  
11 conveyor. The method can further include the step of  
12 collecting all the carcasses conveyed out of the poultry  
13 house in a container for disposal.

14 In addition, the step of collecting the carcasses on  
15 the conveyor includes placing all the carcasses collected  
16 on the floor onto the conveyor during a single traverse  
17 of the length of the poultry. Moreover, the step of  
18 positioning the conveyor further includes step of  
19 positioning the conveyor along the longitudinal  
20 centerline axis of the poultry house.

21 The positioning step also includes the step of  
22 suspending the conveyor off of the floor of the poultry  
23 house. Also, the step of suspending the conveyor  
24 comprises, according to a further embodiment of the  
25 invention, suspended the conveyor by wires that extend  
26 and retract to move the conveyor between a stored



1 position adjacent a ceiling of the poultry house and an  
2 operational position adjacent to the floor of the poultry  
3 house which permits easy loading of poultry from the  
4 poultry house floor onto the conveyor belt.

5       The step of positioning the conveyor can further  
6 comprises the step of adjusting the height of the  
7 conveyor above the floor of the poultry house to a height  
8 for easy loading of carcasses onto the conveyor as well  
9 as moving the conveyor from a stored position adjacent a  
10 ceiling of the poultry house to an operational position  
11 adjacent to the floor of the poultry house which permits  
12 easy loading of carcasses from the poultry house floor  
13 onto the conveyor. Moreover, the step of positioning the  
14 conveyor can further include the step of storing the  
15 conveyor by moving the conveyor from the operational  
16 position to the stored position adjacent the ceiling  
17 after all the carcasses are conveyed out of the poultry  
18 house.

19       In accordance with yet another embodiment of the  
20 method, the step of suspending the conveyor comprises  
21 suspending a basket from an overhead rail by wheels, at  
22 least a portion of the overhead rail extending  
23 substantially parallel to the longitudinal axis of the  
24 poultry house. In this embodiment of the invention, the  
25 step of positioning the conveyor can comprising the step  
26 of positioning the conveyor along the longitudinal

1 centerline axis of the poultry house or adjacent the  
2 interior perimeter of the poultry house. In this  
3 embodiment, the step of collecting the carcasses on the  
4 conveyor comprises placing the carcasses in the basket  
5 suspended from the overhead rail while manually rolling  
6 the basket along the rail substantially from one end of  
7 the poultry house to the other. As previously noted, the  
8 basket is substantially open on all side so that the step  
9 of collecting the carcasses further comprising placing  
10 the carcasses of dead poultry into the basket from any  
11 side of the basket.

12 Alternatively the step of suspending the conveyor  
13 comprises suspending the basket from an overhead rail by  
14 a motor driven wheel, at least a portion of the overhead  
15 rail extending parallel to the longitudinal axis of the  
16 poultry house. In this arrangement, the step of  
17 collecting the carcasses on the conveyor comprises  
18 placing the carcasses in the basket suspended from the  
19 overhead rail while the basket is moved along the rail  
20 under the control of the motor driven wheel. In this  
21 arrangement, the method further includes controlling the  
22 operation of the motor driven wheel with a remote  
23 control, hand-held device so that the position of the  
24 basket along the overhead rail is controlled by the  
25 remote control device.

26 In the embodiments of the method employing the

1 overhead rail, the step of positioning the conveyor  
2 comprises further comprises positioning the overhead rail  
3 so as to extend substantially along the longitudinal  
4 centerline axis of the poultry house or in the  
5 alternative, adjacent to an interior perimeter of the  
6 poultry house. In the latter embodiment, the step of  
7 positioning the overhead rail adjacent to the interior  
8 perimeter of the house can be in the form of a closed  
9 loop as best seen in Figure 4.

10       Although the present invention has been described  
11 with particular reference to its preferred embodiments,  
12 it should be understood that many variations and  
13 modifications will now be obvious to those skilled in the  
14 art and it is preferred, therefore, that the scope of the  
15 invention be limited, not by the specific disclosure  
16 herein, but rather only by the appended claims.